

Date: Tue, 2 Nov 93 04:30:50 PST  
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>  
Errors-To: Ham-Space-Errors@UCSD.Edu  
Reply-To: Ham-Space@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Space Digest V93 #74  
To: Ham-Space

## Today's Topics:

## ANS-303 BULLETINS

## Shuttle Antenna

### STS-58 SAREX signal strength

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>

Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to [brian@ucsd.edu](mailto:brian@ucsd.edu).

Archives of past issues of the Ham-Space Digest are available (by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

We trust that readers are intelligent enough to realize that all text herein consists of personal comments and does not represent the official policies or positions of any party. Your mileage may vary. So there.

Date: Sun, 31 Oct 1993 15:36:35 MST

From: europa.eng.gtefsd.com!howland.reston.ans.net!math.ohio-state.edu!

cyber2.cyberstore.ca!nntp.cs.ubc.ca!unixg.ubc.ca!kakwa.ucs.ualberta.ca!alberta!

ugc!nebulus!ve6mgs!usenet@library.ucla.edu

Subject: ANS-303 BULLETINS

To: ham-space@ucsd.edu

STS-58 SAREX MTSSTON ENDS

### 375-38 CANTER WILSON 2010

HR ANSAT NEWS SERVICE BULLETIN 503.01 FROM ANSAT HQ  
SILVER SPRING MD OCTOBER 30 1993

SILVER SPRING, MD OCTOBER 30, 1993  
TO ALL RADIO AMATEURS RT

TO ALL RADIO AMATEURS BY  
R.F.C. 14 NOV. 1926 21

BID: \$ANS-303.01

## STS-58 Astronauts Break All SAREX Records

Now that the Space Shuttle Columbia Astronauts have packed away the Shuttle Amateur Radio Experiment (SAREX) gear, it can be said that this SAREX flight was one of the most successful performed to date. All facets of

this SAREX flight were performed superbly. This was a testament of the outstanding support and preparation by the Astronauts on-orbit and the SAREX team on the ground. For the DX chaser, this mission will probably be remembered for the special effort that was made on the part of the astronauts to make as many general voice QSO contacts as their busy schedule would allow. The astronauts were available on voice for all the "scheduled" general QSO opportunities and many additional passes.

Estimates of the number of voice contacts are difficult without hearing the tape logs but are probably in the high hundreds. With respect to packet QSOs, well over 800 at this time is a good estimate. Until the SAREX logs have been completely examined, these are only preliminary estimates.

One important facet of SAREX is school group contacts. This mission shined from a school group success standpoint. Of the 17 school groups and 8 personal contacts planned, only 2 school group and 1 personal contacts had to be repeated. The probability of a successful school contact on the first attempt was nearly 90% for this mission. During previous missions, our success rate was between 66-75%. Also, the majority of the schools had horizon to horizon contacts and many schools had 10 or more questions answered. Hundreds of school children were thrilled by the experience of talking directly with the STS-58 astronauts and asking questions about various aspects of space flight. Many thousand more were also able to listen into the conversation. On 21-OCT-93, the Lycee Gaston Febus school in Pau, France had a telebridge contact with the astronauts. Jean-Marc Dumont, the French school coordinator reports that over 10,000 students throughout France listened to the contact through a national repeater link. The SAREX Working Group wishes to thank the school group volunteers for their outstanding efforts, the ARRL for their educational lesson plans and education support, the AMSAT technical mentors who coached the schools prior to the contact, and those who helped in the Mission Control Customer Support room; particularly John Nickel (WD5EEV), and Karen Nickel (WD5EEU).

If you heard or worked the STS-58 station of KC5ACR or W5RRR-1 and you would like to receive a QSL card, then please send your QSL card to the following address: ARRL, STS-58 QSL, 225 Main Street, Newington, CT, 06111. Please allow for up to 6-10 months for the STS-58 SAREX Mission QSL card to be mailed. Please include with your QSL card all the specific QSO information such as, date, time, mode, frequency, etc. Also, and most importantly, if you wish to receive a QSL card confirming a contact, YOU MUST INCLUDE A SELF-ADDRESS-STAMPED-ENVELOPE (SASE) WITH PROPER POSTAGE! If you do not include a SASE, you will not receive a QSL card.

A great deal of recognition should be given to the hard work done by the SAREX Working Group which listened to the feedback from radio amateurs from previous SAREX missions and worked very hard improve operations. Also, a big "thanks" is due to the astronauts aboard STS-58; particularly Bill McArthur (KC5ACR), Marty Fettman (KC5AXA), and Rick Searfoss, (KC5CKM).

In the upcoming weeks as the SAREX logs are analyzed by the SAREX Team, the AMSAT News Service (ANS) bulletins will publish final STS-58 operational statistics.

[The AMSAT News Service (ANS) would like to thank Frank Bauer (KA3HDO) for the information which went into this bulletin item.]

/EX

SB SAT @ AMSAT \$ANS-303.02

AMSAT OPS NET SCHEDULE

HR AMSAT NEWS SERVICE BULLETIN 303.02 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 30, 1993  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-303.02

#### Current AMSAT Operations Net Schedule For A0-13

AMSAT Operations Nets are planned for the following times. Mode-B Nets are conducted on A0-13 on a downlink frequency of 145.950 MHz. If, at the start of the OPS Net, the frequency of 145.950 MHz is being used for a QSO, OPS Net enthusiasts are asked to move to the alternate frequency of 145.955 MHz.

Date	UTC	Mode	Phs	NCS	Alt NCS
13-Nov-93	1230	B	146	VE2LVC	W5IU
28-Nov-93	0230	B	39	WJ9F	VE2LVC
12-Dec-93	0435	B	180	W90DI	WB6LL0

Any stations with information on current events would be most welcomed. Also, those interested in discussing technical issues or who have questions about any particular aspect of OSCAR statellite operations, are encouraged to join the OPS Nets. In the unlikely event that either the Net Control Station (NCS) or the alternate do not call on frequency, any participant is invited to act as the NCS.

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#### Slow Scan Television on A0-13

SSTV sessions will be held on immediately after the OPS Nets a downlink on a Mode-B downlink frequency 145.960 MHz.

/EX

SB SAT @ AMSAT \$ANS-303.03

WEEKLY OSCAR STATUS REPORTS

HR AMSAT NEWS SERVICE BULLETIN 303.03 FROM AMSAT HQ  
SILVER SPRING, MD OCTOBER 30, 1993  
TO ALL RADIO AMATEURS BT  
BID: \$ANS-303.03

Weekly OSCAR Status Reports: 23-OCT-93

A0-13: Current Transponder Operating Schedule:  
M QST \*\*\* A0-13 TRANSPONDER SCHEDULE \*\*\* 1993 Oct 25-Nov 15  
Mode-B : MA 0 to MA 130 !  
Mode-BS : MA 130 to MA 180 !  
Mode-S : MA 180 to MA 205 !<- S transponder; B trsp. is OFF  
Mode-S : MA 205 to MA 210 !<- S beacon only  
Mode-BS : MA 210 to MA 226 ! Blon/Blat 210/0  
Omnis : MA 240 to MA 80 ! Move to attitude 240/0, Nov 15  
Please don't uplink to Mode-B between MA 180-205 as this interferes with  
Mode-S transponder operations. Continuous up-to-date information about  
A0-13 operations is always available on the beacons at 145.812 MHz and  
2400.646 MHz in CW, RTTY and 400 bps PSK. Also, these bulletins are also  
posted to INTERNET, ANS bulletins, Packet, PACSATs, as well as many  
international newsletters. [G3RUH/DB2OS/VK5AGR]

A0-16: Operating normally. [WH6I]

U0-22: Operating normally. [WH6I]

L0-19: Operating normally. [WH6I]

K0-23: Up and running. Busy as usual. [WH6I]

K0-25: File system is up and running but not open for uploads. [WH6I]

IO-26: Up and running with a lot of activity. [WH6I]

NOTE: All of the above digital "birds" are now using the new suite of  
programs. They all broadcast both directories and files. PB920430 works  
with all of them. [WH6I]

A0-10: SM0MRJ reports that last week downlink signals are quite strong from  
A0-10 but there are almost no users taking advantage of this OSCAR.  
[SM0MRJ]

The AMSAT NEWS Service (ANS) is looking for volunteers to contribute weekly  
OSCAR status reports. If you have a favorite OSCAR which you work on a  
regular basis and would like to contribute to this bulletin, please send  
your observations to WD0HHU at his CompuServe address of 70524,2272, on  
INTERNET at wd0hhu@amsat.org, or to his local packet BBS in the Denver, CO  
area, WD0HHU @ W0LJF.#NECO.CO.USA.NOAM. Also, if you find that the current

set of orbital elements are not generating the correct AOS/LOS times at your QTH, PLEASE INCLUDE THAT INFORMATION AS WELL. The information you provide will be of value to all OSCAR enthusiasts.

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Date: Mon, 1 Nov 1993 17:04:56 GMT  
From: mdisea!mothost!lmpsbbbs!news@uunet.uu.net  
Subject: Shuttle Antenna  
To: ham-space@ucsd.edu

In article 26EA0B20@vms.csd.mu.edu, bargholzg@vms.csd.mu.edu (Gary S. Bargholz) writes:

{Does anyone have any information on what type of antenna is used on the shuttle for 2 meter packet and voice? I read an article stating they used a "cavity" antenna that "they poped in the front window".

As the shuttle orbits rear forward, is this why I hear them so much better the second half of each pass (as the antenna is in a front window?). Also, is this type of antenna directional at all.

{Thanks for your help in advance.

{N9UUR Gary Bargholz Brown Deer. Wi.

They use a cavity backed loop antenna and yes, it is directional. The orientation of the space craft does make a difference as to the received signal strength. Currently the antenna gets placed in the left front window of the orbiter. This position is based on being in the shuttle facing forward.

This antenna is basically a loop placed in a square container. The antenna is parallel to the back surface of the container.

During sts55, an experiment was done to measure the difference between the internal and an external antenna, which was mounted on the German space lab module. The external antenna wa on average 10dB better, so, keep your fingers crossed. . .

Bruce, WB4YUC

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Date: Mon, 1 Nov 1993 17:13:48 GMT  
From: mdisea!mothost!lmpsbbbs!news@uunet.uu.net  
Subject: STS-58 SAREX signal strength  
To: ham-space@ucsd.edu

In article 11939@iccgcc.decnet.ab.com, whitej@iccgcc.decnet.ab.com writes:  
}In article <2ahfa0\$jq8@access.digex.net>, cormackj@access.digex.net (John Cormack) writes:

{John,  
}I have noticed some peculiar behavior on this shuttle mission with regard  
}to signal strengths. I have heard STS-58 on voice and packet on almost  
}every usable pass over the Cleveland, Ohio area. Last Sat. & Sun. I  
}listened to them on voice as they communicated with high school classes  
}and observed horizon to horizon booming signals. On other passes this week  
signal strengths

{were noticeably lower and in fact much like other Sarex missions. I am  
}speculating that they have other equipment on board which they are using  
}with a decent antenna when talking with schools. I also suspect they  
}are using the window antenna for routine ham communications. My experience  
}with the indoor antenna is that it is very directional and in general a  
}terrible arrangement. I suspect that with the space lab that they have  
}access to an external antenna which provides much better coverage.

Maybe somebody out there knows the real story. 73 Joe KE6HA

}

Sorry, no external antenna. They are using a cavity backed loop antenna that has  
been

used since day one. Yes, it is directional and the shuttle will not always be in  
an optimum position to be heard. I imagine for the school contacts they position  
the

orbiter for optimum signal on the ground. You can't imagine the paperwork that  
will be

required to get an external antenna - because it means putting a hole in a  
critical

bulkhead somewhere to facilitate the coaxial feed.

Bruce, WB4YUC, el YUCCO. . .

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End of Ham-Space Digest V93 #74

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